ENVIRONMENTAL CONSULTING & MANAGEMENT
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August 31, 2016

Mike Cirian, P.E.
USEPA
108 East 9th Street
Libby, Montana 59923

Re: Concrete Sampling and Analysis Plan
Columbia Falls Aluminum Company
Columbia Falls, Montana

Dear Mr. Cirian:

On behalf of Columbia Falls Aluminum Company (CFAC), Roux Associates, Inc. (Roux Associates) is submitting this letter to request concurrence from the United States Environmental Protection Agency (USEPA) with our approach to conduct sampling and laboratory analysis of concrete from the pot line building floors and basement at the CFAC Site. The concrete sampling activities are designed to determine if the concrete is suitable for use as subgrade backfill as part of the ongoing demolition activities being conducted by Calbag Resources (Calbag). The Scope of Work under this work plan will be conducted within a portion of the CFAC Remedial Investigation/Feasibility Study (RI/FS) Site boundary in accordance with the Administrative Order on Consent (AOC) between CFAC and the USEPA dated November 30, 2015. Specifically, CFAC has identified the analysis of concrete as an additional data need pursuant to Paragraph 42a of the AOC.

BACKGROUND

Calbag is conducting ongoing salvage and demolition activities of the CFAC Main Plant buildings. As part of the demolition, Calbag plans on sampling various building materials to support waste characterization, handling, and disposal as needed throughout the demolition. The sampling and management of waste is described in Calbag's Waste Management Plan for Building 1 (WMP), which has been approved by the Montana Department of Environmental Quality (MDEQ). As part of the WMP, Calbag has indicated that they will potentially utilize concrete from the pot room floors and basements as fill, provided the concrete is deemed acceptable as fill material by the USEPA.

The Calbag WMP outlines the proposed concrete sampling that will be conducted by Calbag to support the waste characterization and management. Calbag plans to collect and analyze samples of the concrete materials as cathode removal occurs. After cathodes are removed from the pot rooms, beginning with pot rooms 1 and 2, concrete chip samples will

be collected. Samples will be collected from the pot room floors, basement floors and concrete walls.

According to the WMP, Calbag will analyze the concrete material samples for the following parameters:

- RCRA 8 metals;
- Total Fluoride;
- Total Cyanide; and
- Polychlorinated biphenyls (PCBs).

In accordance with the WMP, if any of the results of the RCRA 8 metals exceeds 20 times the RCRA toxicity characteristic action level per 40 CFR §261.24, Calbag will request the sample be extracted by the Toxicity Characteristic Leaching Procedure (TCLP), the extract analyzed, and the results compared to the RCRA toxicity characteristic action level. Calbag will compare the analytical results to 40 CFR §261.20, the narrative for hazardous waste determinations under RCRA. Any areas of concrete that are deemed hazardous waste per 40 CFR §261.20 will require removal and will be cut out and sent to the appropriate landfill.

As described in the WMP, there is no RCRA regulatory action level for fluoride. The WMP also describes that for cyanide, there is sufficient knowledge of process to demonstrate that the concrete does not exhibit the characteristic of reactivity.

It is Roux Associates' understanding that the proposed end use of the concrete that is not classified as hazardous waste, is to fill in the voids left below the pot rooms after demolition of each room. Once the demolition is complete, concrete used as fill material will be susceptible to rain and infiltration. Therefore, if the concrete contains elevated levels of Contaminants of Potential Concerns (COPCs), potential leaching of materials from the concrete, as well as direct exposure pathways, could be a future concern. The remainder of this Work Plan discusses the additional sampling and analysis proposed by CFAC and Roux Associates to evaluate the concentrations of COPCs in concrete materials and determine if the concrete is acceptable for use as fill material.

PROPOSED SAMPLING PLAN

A description of the Calbag sampling procedures can be found in the WMP and its associated SAP. Calbag personnel will begin concrete sample collection in Pot Room #1 following the removal of all cathode materials from Pot Room #1. Sample collection will continue from each Pot Room after Calbag completes the cathode removal activities within each Pot Room. The general sampling areas are shown on the map attached to this Work Plan. The following summarizes the sampling locations and frequency per the SAP included as Appendix F to the WMP:

- Four, five-point composite samples will be collected in four equal grids that are about 256 feet long and 92 feet wide, from each pot room on each level (ground and basement);
- Four, five-point composite samples will be collected randomly from support structures including hammerheads, columns, and bus bar supports, and walls;
- One, five-point composite sample will be collected from the wall at each end of all ten pot room basements;
- Discrete samples may be collected from the concrete floors from areas where visible staining is observed; and
- Three, five point composite samples will be collected from the battery room floor.

The proposed Calbag scope of work is projected to take approximately one year. All of the samples will be sent under chain-of-custody to TestAmerica Laboratories, Inc. in Edison, NJ, which is the laboratory being utilized for the RI/FS Phase I Site Characterization.

In addition to the sample analysis that is required in the WMP as described above, Roux Associates is proposing to analyze the concrete samples for target compound list (TCL) Semi Volatile Organic Compounds (SVOCs). Roux Associates is also proposing to perform Synthetic Precipitation Leaching Procedure (SPLP) (EPA SW-846 Method 1312) extraction tests on the concrete samples in an effort to assess potential for leaching conditions. SPLP extraction tests are designed to simulate the potential for leaching of contaminants from material in-situ (in or on top of the ground surface) that is exposed to rainfall (with an assumption that the rainfall is slightly acidic). Because the Synthetic Precipitation Leaching Procedure simulates actual environmental precipitation, and the leaching potential of a contaminant in soil, it offers a straightforward method to assess chemical mobility in the environment.

After performing the SPLP on the concrete samples, the leachate is proposed to be analyzed for the following parameters using the same methods described in the CFAC RI/FS Work Plan and Phase I Sampling and Analysis Plan:

- TCL Volatile Organic Compounds (VOCs);
- TCL SVOCs;
- Target Analyte List (TAL) Metals;
- PCBs;
- Free Cyanide; and
- Fluoride.

Sample results obtained by Calbag from the analyses conducted as part of the WMP will be combined with the additional data set from the sampling described above. All data will be imported to the CFAC RI/FS EQuIS database maintained by Roux Associates.

DATA EVALUATION AND REPORTING

After sampling of concrete is completed in each individual Pot Room, Roux Associates will prepare a letter report summarizing the results of the sampling efforts. Each letter report will indicate the number of samples collected, locations of samples, and sample results. Concrete data presented in each letter report will be compared to USEPA screening levels to evaluate the potential use of concrete as fill. Concrete total analyses results will be compared to USEPA residential and industrial risk screening levels to evaluate potential exposure risk. The SPLP leachate analysis results from the concrete samples will be compared to USEPA MCLs where available and in the absence of MCLs, USEPA tapwater risk screening levels will be used. Based on the comparisons to USEPA screening levels, Roux Associates and CFAC will provide recommendations regarding use of the concrete for fill and request concurrence from the USEPA with the recommendations.

Please contact us if you have any questions or comments on the proposed Scope of Work outlined within this Work Plan.

Sincerely,

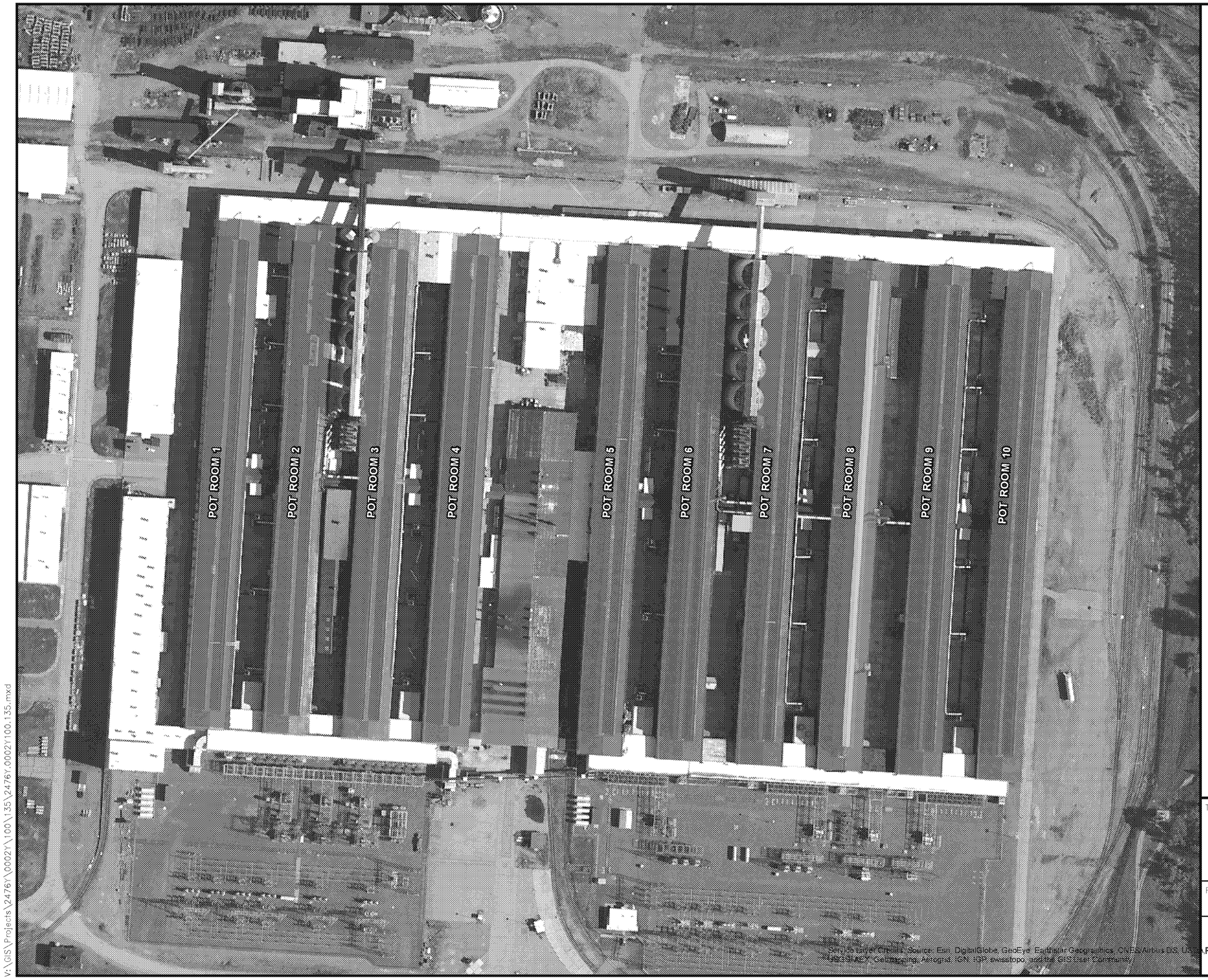
ROUX ASSOCIATES, INC.

Michael Ritorto
Senior Hydrogeologist
RI Manager

Andrew Baris
Principal Hydrogeologist/
Vice President
RI/FS Manager

Attachment: Figure 1 – Sampling Areas

cc: John Stroiazzo, Glencore
Steve Wright, CFAC
Lisa DeWitt, Montana Department of Environmental Quality



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Legend

SAMPLING AREAS

100 0 100 200

Feet

Title:

CONCRETE SAMPLING AREAS

2000 ALUMINUM DRIVE
COLUMBIA FALLS, MONTANA

Prepared For:

COLUMBIA FALLS ALUMINUM COMPANY, LLC

ROUX ASSOCIATES, INC.
Environmental Consulting & Management

Compiled by: M.R.	Date: 22AUG16	FIGURE 1
Prepared by: M.R.	Scale: 1 "= 200 '	
Project Mgr: M.R.	Project: 2476.0001Y002	
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